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The pros and cons of geoengineering

4 June 2009

Geoengineering solutions to curb global warming may offer advantages in combating temperature rise, but could also significantly damage the earth's eco-systems, climate scientists say in a new study published recently in the *Journal of Geophysical Research*.

One such proposal is the deliberate brightening of clouds by adding sea-salt particles to increase their reflectivity. Extensive sheets of low-level cloud exist off the coasts of South Africa, South America and the western USA, and by 'seeding' these clouds to reflect more sunlight away from the Earth, global warming could be slowed.

Met Office scientists, led by Dr Andy Jones, have investigated the effects of this particular way of modifying climate using the Met Office Hadley Centre coupled climate model, and find that global warming could be slowed by up to 25 years. While there is clearly significant benefit in delaying increased temperatures, the results also reveal the downside to such geoengineering. The most serious is a sharp decrease in rainfall over South America, which would likely accelerate the die-back of the Amazon rainforest and the subsequent loss of one of the world's major carbon stores.

Commenting on the study, Andy Jones said: "While some areas do benefit from geoengineering of this sort there are other, very significant regions, where the response could be very detrimental, raising questions about the practicality of such a scheme."

Notes

- The Met Office Hadley Centre is the UK's foremost centre for climate change research. Mainly funded by DECC (the Department of Energy and Climate Change), Defra (the Department for Environment, Food and Rural Affairs) and the Ministry of Defence, it provides information and advice to the UK Government on climate change issues.